

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claims 1-41** (canceled)

1           **Claim 42** (previously presented): A method for obtaining expression of a tumor  
2 suppressor gene in a tumor cell in a mammal *in vivo*, wherein the tumor cell is caused by the  
3 absence of a tumor suppressor gene or the presence of a pathologically mutated tumor suppressor  
4 gene, the method comprising:

5           contacting the tumor cell with an effective amount of a replication-deficient  
6 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein  
7 IX-encoding DNA sequence, and b) a gene encoding a foreign protein having a tumor  
8 suppressive function, wherein said contacting comprises intratumoral, peritumoral or  
9 intravesicular injection of the recombinant adenovirus expression vector under suitable  
10 conditions such that the foreign protein is expressed in the tumor cell.

1           **Claim 43** (currently amended): A method of inhibiting the proliferation of a  
2 tumor cell in a mammal, wherein the tumor cell is caused by the absence of a tumor suppressor  
3 gene or the presence of a pathologically mutated tumor suppressor gene, the method comprising:

4           administering to the mammal an effective amount of a replication-deficient  
5 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein  
6 IX-encoding DNA sequence; and b) a gene encoding a foreign functional protein having a tumor  
7 suppressive function under suitable conditions to the ~~animal~~ mammal, wherein said  
8 administering comprises intratumoral, peritumoral or intravesicular injection of the replication-  
9 deficient recombinant adenovirus vector under suitable conditions such that the foreign  
10 functional protein is expressed in the tumor cell.

1                   **Claim 44** (previously presented): The method of claim 42 or 43, wherein the  
2 tumor suppressor gene encodes a protein selected from the group p53, p21, p16, Rb, Wilm's  
3 tumor WT1 protein, h-NUC, mitotin and miton and p21.

1                   **Claim 45** (previously presented): The method of claim 42 or 43, wherein the  
2 tumor suppressor gene encodes p53.

1                   **Claim 46** (previously presented): The method of claim 42 or 43, wherein the  
2 gene is a suicide gene.

1                   **Claim 47** (previously presented): The method of claim 42 or 43, wherein the  
2 tumor cell is a member selected from the group consisting of non-small cell lung cancer, small  
3 cell lung cancer, hepatocarcinoma, melanoma, retinoblastoma, breast tumor, colorectal  
4 carcinoma, leukemia, lymphoma, brain tumor, cervical carcinoma, sarcoma, prostate tumor,  
5 bladder tumor, tumor of the reticuloendothelial tissues, Wilm's tumor, astrocytoma,  
6 glioblastoma, neuroblastoma, ovarian carcinoma, osteosarcoma, or renal cancer.

1                   **Claim 48** (previously presented): The method of claim 42 or 43, wherein  
2 deletion of the protein IX-encoding DNA sequence extends from about 3500 bp from the 5' viral  
3 termini to about 4000 bp from the 5' viral termini.

1                   **Claim 49** (previously presented): The method of claim 42 or 43, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of a non-essential DNA  
3 sequence in adenovirus early region 3 or early region 4.

1                   **Claim 50** (previously presented): The method of claim 42 or 43, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of DNA sequences  
3 designated adenovirus E1a and E1b.

1                   **Claim 51** (previously presented): The method of claim 42 or 43, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of early region 3 or 4 and  
3 DNA sequences designated adenovirus E1a and E1b.

1                   **Claim 52** (currently amended): The method of claim 51 ~~42 or 43~~, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of up to forty nucleotides  
3 positioned 3' to the site of the adenovirus E1a and E1b DNA sequence deletions ~~deletion~~,  
4 [[E1b,]] and the site of the partial or total deletion of the protein IX-encoding deletions ~~sequence~~,  
5 and wherein said foreign functional protein comprises a polyadenylation signal.

1                   **Claim 53** (previously presented): The method of claim 42 or 43, wherein the  
2 recombinant adenovirus expression vector is a Group C adenovirus selected from a serotype 1, 2,  
3 5 or 6.

1                   **Claim 54** (previously presented): The method of claim 42 or 43, wherein the  
2 recombinant adenovirus expression vector is selected from the group consisting of A/C/N/53 and  
3 A/M/N/53.

1                   **Claim 55** (previously presented): The method of claim 42 or 43, further  
2 comprising administering a therapeutic agent that controls cell cycle progression and/or induces  
3 cell death.

1                   **Claim 56** (previously presented): The method of claim 42 or 43, wherein the  
2 mammal is a human.

1                   **Claim 57** (previously presented): A method for obtaining expression of a suicide  
2 protein in a cell, the method comprising administering to the cell an effective amount of a  
3 recombinant adenovirus expression vector comprising: a) a partial or total deletion of a protein  
4 IX-encoding DNA sequence, and b) a gene encoding a suicide protein, wherein an mRNA  
5 encoding the suicide protein is produced by the cell.

1                   **Claim 58** (currently amended): A method for reducing the proliferation of a  
2 tumor [[cells]] cell in a mammal, the method comprising administering under suitable conditions  
3 an effective amount of an adenoviral expression vector comprising: a) a partial or total deletion  
4 of a protein IX-encoding DNA sequence, and b) a gene encoding a suicide protein or a  
5 biologically active fragment thereof; and a therapeutic agent that in the presence of the suicide  
6 protein is toxic to the tumor cell.

1                   **Claim 59** (previously presented): The method of claim 58, wherein the  
2 therapeutic agent is a thymidine kinase metabolite or a functional equivalent thereof.

1                   **Claim 60** (previously presented): The method of claim 58, wherein the  
2 thymidine kinase metabolite is ganciclovir or 6-methoxypurine arabinonucleoside or a functional  
3 equivalent thereof.

1                   **Claim 61** (previously presented): The method of claim 58, wherein the  
2 adenoviral expression vector is administered by injection into the tumor mass.

1                   **Claim 62** (previously presented): The method of claim 58, wherein the tumor  
2 cell is hepatocellular carcinoma.

1                   **Claim 63** (previously presented): The method of claim 58, wherein the  
2 adenoviral expression vector is administered directly into the hepatic artery of the subject.

1                   **Claim 64** (canceled)

1                   **Claim 65** (previously presented): The method of claim 58, wherein the suicide  
2 protein is a functional thymidine kinase protein, a functional *E. coli* *DEO Δ* protein, or a  
3 functional cytosine deaminase protein.

1                   **Claim 66** (previously presented): The method of claim 58, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of a non-essential DNA  
3 sequence in adenovirus early region 3 or early region 4.

1                   **Claim 67** (previously presented): The method of claim 58, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of DNA sequences  
3 designated adenovirus E1a and E1b.

1                   **Claim 68** (previously presented): The method of claim 58, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of early region 3 or 4 and  
3 DNA sequences designated adenovirus E1a and E1b.

1                   **Claim 69** (currently amended): The method of claim 68 ~~[[58]]~~, wherein the  
2 recombinant adenovirus expression vector further comprises a deletion of up to forty nucleotides  
3 positioned 3' to the site of the adenovirus E1a and E1b DNA sequence deletions ~~deletion~~,  
4 ~~[[E1b,]]~~ and the site of the partial or total deletion of the protein IX-encoding deletions sequence,  
5 and wherein said foreign functional protein comprises a polyadenylation signal.

1                   **Claim 70** (previously presented): The method of claim 58, wherein the  
2 recombinant adenovirus expression vector is a Group C adenovirus selected from a serotype 1, 2,  
3 5 or 6.

1                   **Claim 71** (previously presented): The method of claim 58, wherein the  
2 recombinant adenovirus expression vector is selected from the group consisting of A/C/N/53 or  
3 A/M/N/53.

1                   **Claim 72** (previously presented): The method claim 58, further comprising  
2 administering a therapeutic agent that controls cell cycle progression and/or induces cell death.

1                   **Claim 73** (previously presented): The method of claim 58, wherein the tumor  
2 cell is a human tumor cell.

1                   **Claim 74** (previously presented): A kit for reducing the proliferation of tumor  
2 cells comprising the components of the adenoviral expression vector of claim 58, a thymidine  
3 kinase metabolite or functional equivalent thereof, pharmaceutical carriers and instructions for  
4 the treatment of hepatocellular carcinoma using the kit components.